Claims

1. Optical module with

- a circuit carrier (10);

- A semiconductor element (12) arranged on the circuit carrier (10); and

- a lens unit (14; 16, 18, 20; 21) for projecting electromagnetic radiation onto the semiconductor element (12);

characterized in that,

- the lens unit (14; 16, 18, 20; 21) is arranged supported directly on the sensitive surface (34) of the semiconductor element (12).

2. Optical module in accordance with claim 1,

characterized in that,

the lens unit (14; 16, 18, 20; 21) features a lens holder (14) which is arranged supported on the

sensitive surface (34) of the semiconductor element (12).

3. Optical module in accordance with claim 2,

characterized in that,

a frame-shaped area (32) or supports or such like are embodied on the lens holder (14) at least in sections, on which the semiconductor element (12) rests with its optical surface (34).

4. Optical module in accordance with claim 1,

characterized in that,

the lens unit (14; 16, 18, 20; 21) features a support lens (16) which is arranged supported on the sensitive surface (34) of the semiconductor element (12).

5. Optical module in accordance with claim 4,

characterized in that,

the support lens (16) features a flat surface (17) on

which the semiconductor element (12) rests with its sensitive surface (34).

6. Optical module in accordance with claim 5,

characterized in that,

an optical gel is arranged between the flat surface (17) of the support lens (16) and the sensitive surface (34) of the semiconductor element (12).

7. Optical module in accordance with one of the claims 4 to 6,

characterized in that,

a frame-shaped area or supports (33) or such like are embodied on the support lens (16) at least in sections of it, on which the semiconductor element (12) rests with its sensitive surface (34).

8. Optical module in accordance with one of the previous claims,

characterized in that,

- the semiconductor element (12) is arranged on the opposite side of the circuit carrier (10) to the lens unit; and

- the circuit carrier (10) features an opening (24), through which electromagnetic radiation is projected by the lens arrangement (16, 18, 20; 21) onto the semiconductor element (12).

9. Optical module in accordance with one of the claims 3 or 7 and 8,

characterized in that,

the frame-shaped area (32) of the lens holder (14) or the support lens (16) is designed so that

- this is at least as large as the sensitive surface (34) of the semiconductor element (12); and

- is slightly smaller than the opening (24) embodied in the circuit carrier (10) on which the semiconductor element (12) is mounted.

10. Optical module in accordance with claim 3 or one of the claims 7 to 9, with the semiconductor element (12) being arranged as a flip chip on the circuit carrier (10),

characterized in that,

the frame-shaped area (32) of the lens holder (14) or the support lens (16) is embodied enclosed, so that the frame (32) thus embodied functions at the same time as a flow barrier against an underfill material (31) which is introduced between these two (12; 10) during the arrangement of the semiconductor element (12) on the circuit carrier (10).

11. Optical module in accordance with one of the previous claims,

characterized in that,

the lens unit (14; 16, 18, 20; 21) or the lens holder (14) are connected to the circuit carrier (10) away from the opening (24) embodied in this (10), especially glued, laser-welded, screwed and/or in other similar

ways.

12. Optical system with an optical module in accordance with one of the previous claims.